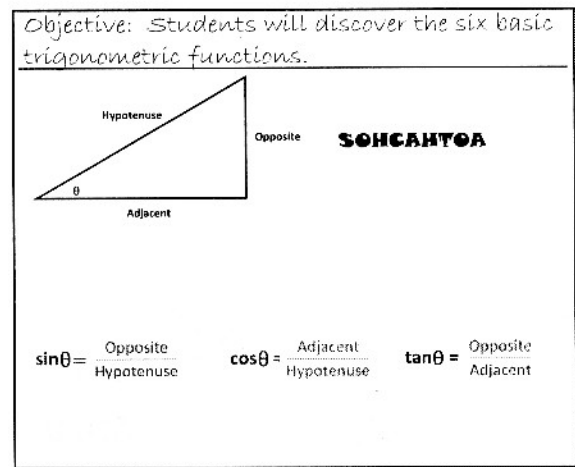
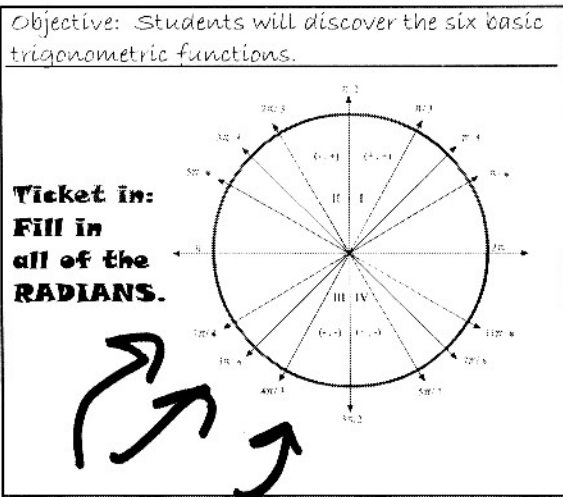
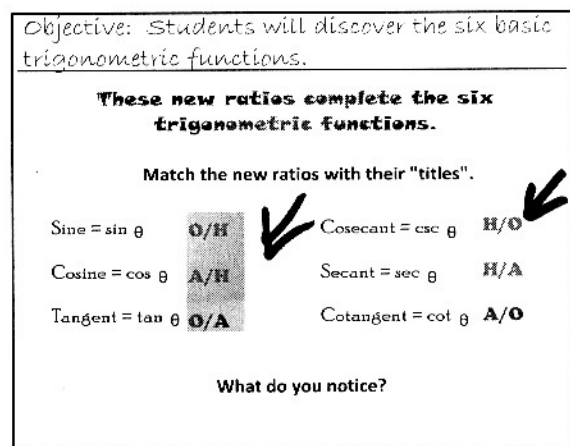
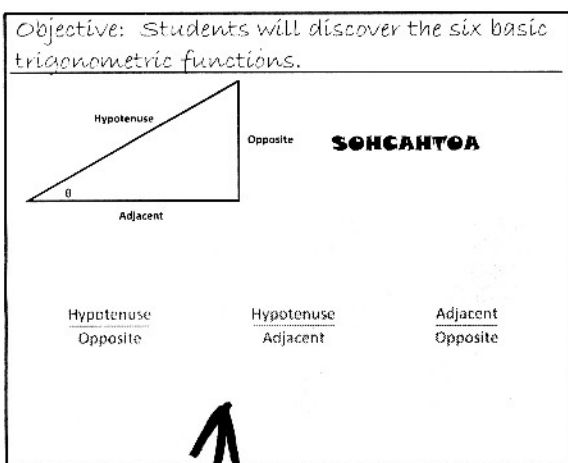


Ticket in  
is to  
review radians

\* lots of  
click to reveal  
answers!

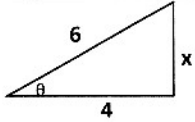


# Right Δ Trig



*\* important slide !*

Objective: Students will discover the six basic trigonometric functions.

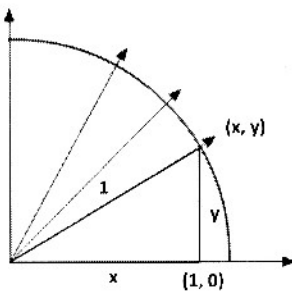


**Find the missing side. Then, find the value of the six trigonometric functions of the angle  $\theta$ .**

$x = 2\sqrt{5}$

$\sin \theta = \frac{2\sqrt{5}}{6}$	$\csc \theta = \frac{6}{2\sqrt{5}}$
$\cos \theta = \frac{4}{6}$	$\sec \theta = \frac{6}{4}$
$\tan \theta = \frac{2\sqrt{5}}{4}$	$\cot \theta = \frac{4}{2\sqrt{5}}$

Does this relate to the UNIT CIRCLE?

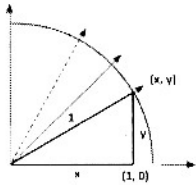


$\sin \theta = y$
$\cos \theta = x$
$\tan \theta = y/x$
$\csc \theta = 1/y$
$\sec \theta = 1/x$
$\cot \theta = x/y$

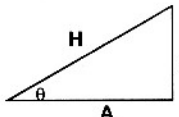
*click*

*We need Kids to make the connection between Rt.  $\Delta$ 's & the unit circle*

Look at the relationship between the functions. Which functions are reciprocals of each other?



$\sin \theta = y$
$\cos \theta = x$
$\tan \theta = y/x$
$\csc \theta = 1/y$
$\sec \theta = 1/x$
$\cot \theta = x/y$

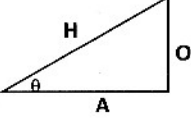


**There are three FUNDAMENTAL IDENTITIES for trig functions.**

- Reciprocal Identities
- Quotient Identities
- Pythagorean Identities

**Today we will work with the first set of fundamental identities**  
**RECIPROCAL IDENTITIES**

↓ NO clicking here!



There are three  
FUNDAMENTAL IDENTITIES  
for trig functions.

- Reciprocal Identities  $\csc \theta = \frac{1}{?}$

Have them  
come up with

the rest!

$$\csc \theta = \frac{1}{\sin \theta} \quad \sin \theta = \frac{1}{\csc \theta}$$

$$\sec \theta = \frac{1}{\cos \theta} \quad \cos \theta = \frac{1}{\sec \theta}$$

$$\tan \theta = \frac{1}{\cot \theta} \quad \cot \theta = \frac{1}{\tan \theta}$$

out of  
order!

①

Given:  
 $\sin \theta = 4/5$  and  $\cos \theta = 3/5$

Find:  $\sec \theta$

$$\sec \theta = \frac{1}{\cos \theta}$$

$$1/(3/5) = \boxed{5/3}$$

#  
X

Given:  
 $\sin \theta = 4/5$  and  $\cos \theta = 3/5$

Find:  $\cot \theta$

~~$\cot \theta = \frac{1}{\tan \theta}$  or  $\frac{\cos \theta}{\sin \theta}$~~

~~$\frac{3/5}{4/5} = \boxed{3/4}$~~

②

Given:  
 $\sin \theta = 4/5$  and  $\cos \theta = 3/5$

Find:  $\csc \theta$

$$\frac{1}{\sin \theta} = \boxed{5/4}$$

✓

④ Given:  $\sin\theta = 4/5$  and  $\cos\theta = 3/5$   
Find:  $\cot\theta$

$\frac{1}{4/3} = 3/4$

↙

③ Given:  $\sin\theta = 4/5$  and  $\cos\theta = 3/5$   
Find:  $\tan\theta$

$\frac{4/5}{3/5} = \frac{4}{3}$

**Homework:**

- Complete the activity on page 830
- Do page 833 (8 - 19 all). Give exact answers only (fractions). Do not worry about decimal answers.

↙ The activity is important to establish trig relationships!